

## ABSTRACT

A cellular radio network based positioning system for determining the position of a mobile station (16). For each base transceiver station (1 to 5) or cell of the network, a fixed list of base transceiver stations is stored by a Mobile Positioning Centre (13). Each list identifies those base transceiver stations which enable the position of a mobile station served by the corresponding base transceiver station (6) to be optimally determined. The list is transmitted to the mobile station (16) via the serving base transceiver station (6) and the mobile station determines an observed time difference for each of the listed base transceiver stations, relative to the serving base transceiver station (6), from signals broadcast by the listed base transceiver stations. The observed time differences are transmitted from the mobile station (6) to the serving base transceiver station (6) and are used by the network to compute the position of the mobile station (16).

Figure 4.